Smart city war on fat

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Abstract:

The increasing incidence of obesity in our country and the emergence of disease at younger age, in children and adolescents, led the Ministry of Health to initiate, starting with October 2008, a program to combat this scourge. The National Health Insurance House (CNAS) carried out this program through the expert committee over 8 years and we want to know if the program has achieved its purpose and which was the compliance to the treatment of the patients included in the program? We wanted to highlight the fact that the various tools of modern technology are useful in fighting obesity but not enough. Despite the interest shown by the governments and scientists in various areas of obesity, the success in fighting this disease is very modest. The present paper attempts to formulate some hypotheses regarding the low compliance of these patients to treatment. These are children and adults with morbid obesity, with difficulty in traveling, with low self-esteem and feelings of fear related to the reaction of others. They have problems of communication with: family, teachers, friends, medical staff, authorities etc. All this contributes to the endless cycle of dissatisfaction, lack of hope and lack of control of one's own life. Excessive eating hidden many dysfunctional thoughts. We analyzed the results of The Slimming Program and formulated some assumptions about the modest results obtained by obese patients in the complex weight loss process. In addition, we listed some advanced technical solutions for the permanent monitoring of the health of these patients, without having to travel to various sanitary units. Communication and permanent support for patients with obesity in the complicated process of slimming, especially from family and medical staff, are essential to the success of any action in this regard.

Keywords: *obesity, BMI, compliance, modern technology.*

1. Introduction

When we talk about smart cities, we think about smart infrastructure, advanced technologies, all kinds of intelligent connections, but less about the level of knowledge of their citizens. Many articles about smart cities talk more about infrastructure than intelligent citizens and rarely both at the same time. What is the point of these smart cities without intelligent citizens, informed people capable of

using the facilities of an advanced city in order to have a high living standard and a healthy lifestyle? Quality of life is a concept that should not be confused with the standard life because the second term is more measurable on the basis of socio-economic indicators, while quality of life has a subjective dimension – more precisely, individual perception of factors that influence well-being.

A daily walk on the streets of Bucharest City we can see that more and more adults and children are fat. This confirms the idea that healthy lifestyle is not a well-known and applied concept. According to scientific studies, obesity is the most common nutritional disorder that affects children, adolescents and adults regardless of gender, race, or socio-economic status. It is a global epidemic with a growing prevalence, Romania ranks 3rd among European countries. The increased prevalence of this disease causes us to talk more about *fat cities* than about *smart cities*. This worrying reality has led governments to take measures against obesity.

2. Talking about health policies
The Ministry of Health and the National Health Insurance House started a **Program** in 2008 **for the treatment of nutrition and metabolic disorders**. During the last 8 years, 786 patients with morbid obesity were treated, of which 23% were children and young people aged between 11 and 26 years. The inclusion criteria in the program were the following:
- BMI ≥ 35 kg / m^2 + 1 comorbidity
- BMI ≥ 40 kg / m^2 ± co-morbidity
- Lack of weight loss at least 3% after 3 months and / or lack of optimization of biological parameters after 12 weeks of diet + physical activity.

The question is whether this program has reached its goal, which was the patient's compliance with treatment, and whether the weight loss process has been accompanied by improved metabolic and lifestyle changes or not.

Observational studies show that good treatment compliance is encountered when more than 80% of patients follow the recommended treatment of the physician. Evaluation of the effectiveness of the NHIHs Program over the past 8 years from its implementation showed that Compliance with treatment was 64%. This means that 36% of patients were non-compliant (irregular dosing / discontinuation of therapy, non-assignment of physical activity, diet and lifestyle change to drug therapy, non-compliance with medical advice regarding calorie diet and periodic assessments).

The main causes of failure to lose weight communicated by patients:
- *contradiction between the indications of parents and doctors*
- *hyper protect parents / parents with little medical knowledge.*
- *excessive confidence in the weight loss pills that can do miracles*
- *the physical / mental impossibility of doing sports or dieting*
- *little knowledge of a healthy lifestyle / partial understanding of medical advice*
- *feelings of futility, loneliness, hopelessness, depression, lack of love, support and understanding*
- *lack of psychological support (from the owners, the specialists, the entourage)*
- *resistance to lifestyle change.*

One year after they released the program (each patient is entitled to 12 months of reimbursed treatment), about 90% of patients regain lost kilos and more.

In conclusion, the Weight Loss Program was partially and short-term success and was not accompanied by lasting changes in the lifestyle of patients. That's why new strategies have been imposed to combat obesity because this war is not an easy one.

The Romanian Ministry of Health launched a portal in 2010: the healthy community (*comunitate-sanatoasa.ms.ro*). This is an instrument through which the Ministry of Health intends to centralize: all the information on the Health Behavior Project in School-aged Children, national and international best practices on behavioral change projects for healthy nutrition and physical activity in children and adolescents. The objective of the research: developing the tools needed to launch a genuine campaign of national change behavior, the LIFE Campaign.

Another portal launched by the Ministry of Health in 2012 is http://www.sets.ro under the motto "2020 And I Live Healthy!" *(2020 SI EU TRAIESC SANATOS!)*. The SETS Movement is an active member of Epode International Network - EIN, the international network that brings together 24 programs with similar methodologies from 18 countries. The goal of the national movement is to prevent juvenile obesity and promote healthy lifestyle among families.

There were many other programs initiated by the Ministry of Health, for example: *horns and milk in schools*, then *a meal of fruits*. Laudable and necessary initiatives, but all of that is enough? Can it be said that the incidence of obesity has decreased in children and among young people? Did the population get healthier skills on meal preparation and food consumption? Did the media campaigns to lower fat, salt and sugar consumption have worked? Perhaps the results will be seen in the coming years, but the analysis and interpretation of the large data volume will take longer.

3. Technology of the future to help obese people
In the meantime, information technology specialists are looking for new ways to help obese people. *Online therapy platforms* and *online nutrition platforms* have been launched. The user only needs a laptop or PC with webcam and microphone and a good internet connection. He must enter the platform, make an account, and then schedule the specialist he wants. Meetings are conducted through a secure videoconference service that guarantees the absolute confidentiality of discussions and information. Those who use these online therapy and counseling services gain time because they set themselves the day and time they want the meeting to take place, and the price is affordable.

Specialists go further and think about developing *search engines* on the internet that will become more like people. They will be able to receive complex questions. The engine could enter into dialogue with people to understand what they need. For example, if an obese person launches the question on the internet: *I have 150 pounds and 20 years, what diet do you recommend?* The search engine will open several *web pages* with variants of low-calorie diets, and will require extra information about the obese person (his body mass index, whether or not he has heart problems and so on). The new search engine will remember the request and will continue to look for a response, and when it finds something suitable it will

communicate it to the applicant. These technological achievements, specific to an intelligent city, will be part of a wider phenomenon, which takes place at an accelerated pace: the integration of human intelligence with the artificial intelligence. The search engine of the future, which will be able to answer complex questions, understand the information contained in the documents it finds, and even identify information that might be useful to people.

Accumulation of energy in the form of fat is enrolled in our DNA and represents a form of survival. The man's ancestors have accumulated any calories in body fat to deal with periods when food was not found. Thanks to the *Human Genome Project*, medicine has become computer science, and specialists are analyzing how to reprogram this obsolete software that our body is equipped with. Deactivation of the insulin receptor gene by animal experiments has been accomplished. The animals ate with lust, they have remained weak and lived longer. This transformation is also attempted in humans. How can we control our weight no matter what we eat? Will we be able to deactivate our fat cells? The artificial intelligence of the cities of the future has the necessary solutions.

4. Let's listen to the stories of obese people

The war on obesity is an open problem. Specialist opinions are shared. Almost all experts agree that starvation compromises weight loss diet because it enters a vicious circle that leads not to weight loss, but to fattening. They recommend eating *real food* and *balance between nutrients*.

But how many experts are willing to listen to the life stories of obese people? I have tried to find out from some of them the reasons for the fattening. These are the patients included in the NHIH Slimming Program: children and adults with morbid obesity, with difficulty in traveling, with low self-esteem and feelings of fear related to the reaction of others. They have problems of communication with: family, teachers, friends, medical staff, authorities etc. All this contributes to the endless cycle of dissatisfaction, lack of hope and lack of control of one's own life. According to psychologists, excessive eating hidden many dysfunctional thoughts. If primary food (which means relationships, career, physical activity, spirituality) is lacking, we will seek refuge in secondary food (food itself). We abuse the food to fill the void that we have inside but we only manage to get fat. Are smart cities ready to help these people? Are cities of the future going to have a soul? Smart cities will be human or will everything be programmed and monitored by artificial intelligence? The future will answer.

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